

In large rehabilitation centers, therapists may work in spacious rooms equipped with machines, tools, and other devices generating noise. The job can be tiring, because therapists are on their feet much of the time. Those providing home health care may spend time driving from appointment to appointment. Therapists also face hazards such as back strain from lifting and moving clients and equipment.

Therapists are increasingly taking on supervisory roles. Due to rising health care costs, third party payers are beginning to encourage occupational therapy assistants and aides to take more hands-on responsibility. By having assistants and aides work more closely with clients under the guidance of a therapist, the cost of therapy should be more modest.

### Employment

Occupational therapists held about 73,000 jobs in 1998; about 1 in 4 worked part time. About 1 in 10 occupational therapists held more than one job in 1998. The largest number of jobs was in hospitals, including many in rehabilitation and psychiatric hospitals. Other major employers include offices and clinics of occupational therapists and other health practitioners, school systems, home health agencies, nursing homes, community mental health centers, adult daycare programs, job training services, and residential care facilities.

Some occupational therapists are self-employed in private practice. They see clients referred by physicians or other health professionals, or provide contract or consulting services to nursing homes, schools, adult daycare programs, and home health agencies.

### Training, Other Qualifications, and Advancement

A bachelor's degree in occupational therapy is the minimum requirement for entry into this field. All States, Puerto Rico, and the District of Columbia regulate occupational therapy. To obtain a license, applicants must graduate from an accredited educational program, and pass a national certification examination. Those who pass the test are awarded the title of registered occupational therapist.

In 1999, entry-level education was offered in 88 bachelor's degree programs; 11 post-bachelor's certificate programs for students with a degree other than occupational therapy; and 53 entry-level master's degree programs. Nineteen programs offered a combined bachelor's and master's degree and 2 offered an entry-level doctoral degree. Most schools have full-time programs, although a growing number also offer weekend or part-time programs.

Occupational therapy coursework includes physical, biological, and behavioral sciences, and the application of occupational therapy theory and skills. Completion of 6 months of supervised fieldwork is also required.

Persons considering this profession should take high school courses in biology, chemistry, physics, health, art, and the social sciences. College admissions offices also look favorably at paid or volunteer experience in the health care field.

Occupational therapists need patience and strong interpersonal skills to inspire trust and respect in their clients. Ingenuity and imagination in adapting activities to individual needs are assets. Those working in home health care must be able to successfully adapt to a variety of settings.

### Job Outlook

Employment of occupational therapists is expected to increase faster than the average for all occupations through 2008. However, Federal legislation imposing limits on reimbursement for therapy services may continue to adversely affect the job market for occupational therapists in the near term. Because of the effects of these provisions, the majority of expected employment growth for occupational therapists is expected to occur in the second half of the projection period.

Over the long run, the demand for occupational therapists should continue to rise as a result of growth in the number of individuals with disabilities or limited function requiring therapy services. The baby-boom generation's movement into middle age, a period when the incidence of heart attack and stroke increases, will increase the demand for therapeutic services. The rapidly growing population 75 years of age and above (an age that suffers from a high incidence of disabling conditions), will also demand additional services. Medical advances now enable more patients with critical problems to survive. These patients may need extensive therapy.

Hospitals will continue to employ a large number of occupational therapists to provide therapy services to acutely ill inpatients. Hospitals will also need occupational therapists to staff their outpatient rehabilitation programs.

Employment growth in schools will result from expansion of the school-age population and extended services for disabled students. Therapists will be needed to help children with disabilities prepare to enter special education programs.

### Earnings

Median annual earnings of occupational therapists were \$48,230 in 1998. The middle 50 percent earned between \$39,140 and \$68,570 a year. The lowest 10 percent earned less than \$30,850 and the highest 10 percent earned more than \$86,540 a year. Median annual earnings in the industries employing the largest number of occupational therapists in 1997 were as follows:

Nursing and personal care facilities .....	\$57,000
Offices of other health care practitioners .....	51,800
Hospitals .....	46,200
Elementary and secondary schools .....	38,200

### Related Occupations

Occupational therapists use specialized knowledge to help individuals perform daily living skills and achieve maximum independence. Other workers performing similar duties include orthotists, prosthetists, physical therapists, chiropractors, speech pathologists, audiologists, rehabilitation counselors, and recreational therapists.

### Sources of Additional Information

For more information on occupational therapy as a career and a list of education programs, send a self-addressed label and \$5.00 to:

✉ The American Occupational Therapy Association, 4720 Montgomery Ln., P.O. Box 31220, Bethesda, MD 20824-1220.

Internet: <http://www.aota.org>

## Pharmacists

(O\*NET 32517)

### Significant Points

- Pharmacists are becoming more involved in drug therapy decision-making and patient counseling.
- Earnings are very high, but some pharmacists work long hours, nights, weekends, and holidays.

### Nature of the Work

Pharmacists dispense drugs prescribed by physicians and other health practitioners and provide information to patients about medications and their use. They advise physicians and other health practitioners on the selection, dosages, interactions, and side effects of medications. Pharmacists must understand the use, composition, and clinical effects of drugs. Compounding—the actual

mixing of ingredients to form powders, tablets, capsules, ointments, and solutions—is only a small part of a pharmacist's practice, because most medicines are produced by pharmaceutical companies in a standard dosage and drug delivery form.

Pharmacists in community or retail pharmacies counsel patients, as well as answer questions about prescription drugs, such as possible adverse reactions or interactions. They provide information about over-the-counter drugs and make recommendations after asking a series of health questions, such as whether the customer is taking any other medications. They also give advice about durable medical equipment and home health care supplies. Those who own or manage community pharmacies may sell nonhealth-related merchandise, hire and supervise personnel, and oversee the general operation of the pharmacy. Some community pharmacists provide specialized services to help patients manage conditions such as diabetes, asthma, smoking cessation, or high blood pressure.

Pharmacists in hospitals and clinics dispense medications and advise the medical staff on the selection and effects of drugs. They may make sterile solutions and buy medical supplies. They also assess, plan, and monitor drug regimens. They counsel patients on the use of drugs while in the hospital, and on their use at home when they are discharged. Pharmacists may also evaluate drug use patterns and outcomes for patients in hospitals or managed care organizations.

Pharmacists who work in home health care monitor drug therapy and prepare infusions—solutions that are injected into patients—and other medications for use in the home.



*Pharmacists must ensure that prescriptions are accurately filled.*

Most pharmacists keep confidential computerized records of patients' drug therapies to ensure that harmful drug interactions do not occur. They frequently teach pharmacy students serving as interns in preparation for graduation and licensure.

Some pharmacists specialize in specific drug therapy areas, such as psychiatric disorders, intravenous nutrition support, oncology, nuclear pharmacy, and pharmacotherapy.

### **Working Conditions**

Pharmacists usually work in clean, well-lighted, and well-ventilated areas. Many pharmacists spend most of their workday on their feet. When working with sterile or potentially dangerous pharmaceutical products, pharmacists wear gloves and masks and work with other special protective equipment. Many community and hospital pharmacies are open for extended hours or around the clock, so pharmacists may work evenings, nights, weekends, and holidays. Consultant pharmacists may travel to nursing homes or other facilities to monitor people's drug therapy.

About 1 out of 7 pharmacists worked part time in 1998. Most full-time salaried pharmacists worked about 40 hours a week. Some, including most self-employed pharmacists, worked more than 50 hours a week.

### **Employment**

Pharmacists held about 185,000 jobs in 1998. About 3 out of 5 worked in community pharmacies, either independently owned or part of a drug store chain, grocery store, department store, or mass merchandiser. Most community pharmacists were salaried employees, but some were self-employed owners. About one-quarter of salaried pharmacists worked in hospitals, and others worked in clinics, mail-order pharmacies, pharmaceutical wholesalers, home health care agencies, or the Federal Government.

Some pharmacists hold more than one job. They may work a standard week in their primary work setting, and also work part time elsewhere.

### **Training, Other Qualifications, and Advancement**

A license to practice pharmacy is required in all States, the District of Columbia, and U.S. territories. To obtain a license, one must serve an internship under a licensed pharmacist, graduate from an accredited college of pharmacy, and pass a State examination. Most States grant a license without extensive reexamination to qualified pharmacists already licensed by another State—check with State boards of pharmacy for details. Many pharmacists are licensed to practice in more than one State. States may require continuing education for license renewal.

In 1998, 81 colleges of pharmacy were accredited to confer degrees by the American Council on Pharmaceutical Education. Nearly all pharmacy programs grant the degree of Doctor of Pharmacy (Pharm.D.) which requires at least 6 years of postsecondary study. A small number of pharmacy schools continue to award the 5-year Bachelor of Science (B.S.) in pharmacy degree. However, all accredited pharmacy schools are expected to graduate their last B.S. class by the year 2005. Either a Pharm.D. or B.S. degree currently fulfills the requirements to take the licensure examination of a state board of pharmacy.

Requirements for admission to colleges of pharmacy vary. A few colleges admit students directly from high school. Most colleges of pharmacy, however, require 1 or 2 years of college-level prepharmacy education. Entry requirements usually include mathematics and basic sciences, such as chemistry, biology, and physics, as well as courses in the humanities and social sciences. Some colleges require the applicant to take the Pharmacy College Admissions Test.

All colleges of pharmacy offer courses in pharmacy practice, designed to teach students to dispense prescriptions, communicate

with patients and other health professionals, and to strengthen their understanding of professional ethics and practice management responsibilities. Pharmacists' training increasingly emphasizes direct patient care, as well as consultative services to other health professionals.

In the 1997-1998 academic year, 60 colleges of pharmacy awarded the Master of Science degree or the Ph.D. degree. Although a number of pharmacy graduates interested in further training pursue an advanced degree in pharmacy, there are other options. Some complete 1- or 2-year residency programs or fellowships. Pharmacy residencies are postgraduate training programs in pharmacy practice. Pharmacy fellowships are highly individualized programs designed to prepare participants to work in research laboratories.

Areas of graduate study include pharmaceuticals and pharmaceutical chemistry (physical and chemical properties of drugs and dosage forms), pharmacology (effects of drugs on the body), and pharmacy administration, including pharmacoeconomics and social-behavioral aspects of patient care.

Prospective pharmacists should have scientific aptitude, good communication skills, and a desire to help others. They must also be conscientious and pay close attention to detail, because the decisions they make affect human lives.

In community pharmacies, pharmacists usually begin at the staff level. After they gain experience and secure the necessary capital, some become owners or part owners of pharmacies. Pharmacists in chain drug stores may be promoted to pharmacy supervisor or manager at the store level, then to the district or regional level, and later to an executive position within the chain's headquarters.

Hospital pharmacists may advance to supervisory or administrative positions. Pharmacists in the pharmaceutical industry may advance in marketing, sales, research, quality control, production, packaging, and other areas.

### Job Outlook

Employment of pharmacists is expected to grow slower than the average for all occupations through the year 2008, despite the increased pharmaceutical needs of a larger and older population, and greater use of medication.

Retail pharmacies are taking steps to increase their prescription volume to make up for declining dispensing fees. Automation of drug dispensing and greater use of pharmacy technicians will help them to dispense more prescriptions. The number of community pharmacists needed in the future will depend on the expansion rate of chain drug stores and the willingness of insurers to reimburse pharmacists for providing clinical services to patients taking prescription medications. With its emphasis on cost control, managed care encourages growth of lower-cost prescription drug distributors such as mail-order firms for certain medications. Slower employment growth is expected in traditional chain and independent pharmacies.

Employment in hospitals is also expected to grow slowly, as hospitals reduce inpatient stays, downsize, and consolidate departments. Pharmacy services are shifting to long-term, ambulatory, and home care settings, where opportunities for pharmacists will be best. New opportunities for pharmacists are emerging in managed care organizations, where pharmacists analyze trends and patterns in medication use for their populations of patients. Fast growth is also expected for pharmacists trained in research, disease management, and pharmacoeconomics—determining the costs and benefits of different drug therapies.

Cost-conscious insurers and health systems may continue to emphasize the role of pharmacists in primary and preventive health services. They realize that the expense of using medication to treat diseases and conditions is often considerably less than the potential costs for patients whose conditions go untreated. Pharmacists can also reduce the expenses resulting from unexpected complications due to allergic reactions or medication interactions.

The increased number of middle aged and elderly people will spur demand for pharmacists in all practice settings. The number of prescriptions influences the demand for pharmacists, and the middle aged and elderly populations use more prescription drugs, on average, than younger people.

Other factors likely to increase the demand for pharmacists through the year 2008 include the likelihood of scientific advances that will make more drug products available, new developments in administering medication, and increasingly sophisticated consumers seeking more information about drugs.

### Earnings

Median annual earnings of pharmacists in 1998 were \$66,220. The middle 50 percent earned between \$52,310 and \$80,250 a year. The lowest 10 percent earned less than \$42,550 and the highest 10 percent more than \$88,670 a year. Median annual earnings in the industries employing the largest numbers of pharmacists in 1997 were as follows:

Grocery stores .....	\$67,000
Drug stores and proprietary stores .....	63,400
Hospitals .....	62,600
Federal government .....	61,700

According to a survey by *Drug Topics* magazine, published by Medical Economics Co., average base salaries of full-time, salaried pharmacists were about \$59,700 a year in 1998. Pharmacists working in chain drug stores had an average base salary of about \$62,300 a year, while pharmacists working in independent drug stores averaged about \$56,300, and hospital pharmacists averaged about \$59,500 a year. Overall, salaries for pharmacists were highest on the West coast. Many pharmacists also receive compensation in the form of bonuses, overtime, and profit-sharing.

### Related Occupations

Persons in other professions who may work with pharmaceutical compounds are biological technicians, medical scientists, pharmaceutical chemists, and pharmacologists.

### Sources of Additional Information

For information on pharmacy as a career, preprofessional and professional requirements, programs offered by all the colleges of pharmacy, and student financial aid, contact:

☛ American Association of Colleges of Pharmacy, 1426 Prince St., Alexandria, VA 22314. Internet: <http://www.aacp.org>

General information on careers in pharmacy is available from:

☛ American Society of Health-System Pharmacists, 7272 Wisconsin Ave., Bethesda, MD 20814. Internet: <http://www.ashp.org>

☛ American Pharmaceutical Association, 2215 Constitution Ave. NW., Washington, DC 20037-2985. Internet: <http://www.aphanet.org>

☛ National Association of Chain Drug Stores, 413 N. Lee St., P.O. Box 1417-D49, Alexandria, VA 22313-1480. Internet: [www.nacds.org](http://www.nacds.org)

State licensure requirements are available from each State's Board of Pharmacy.

Information on specific college entrance requirements, curricula, and financial aid is available from any college of pharmacy.

## Physical Therapists

(O\*NET 32308)

### Significant Points

- Although the effects of Federal limits on reimbursement for therapy services will cause keen competition for jobs during the first half of the projection period, employment is expected to increase over the 1998-2008 period.